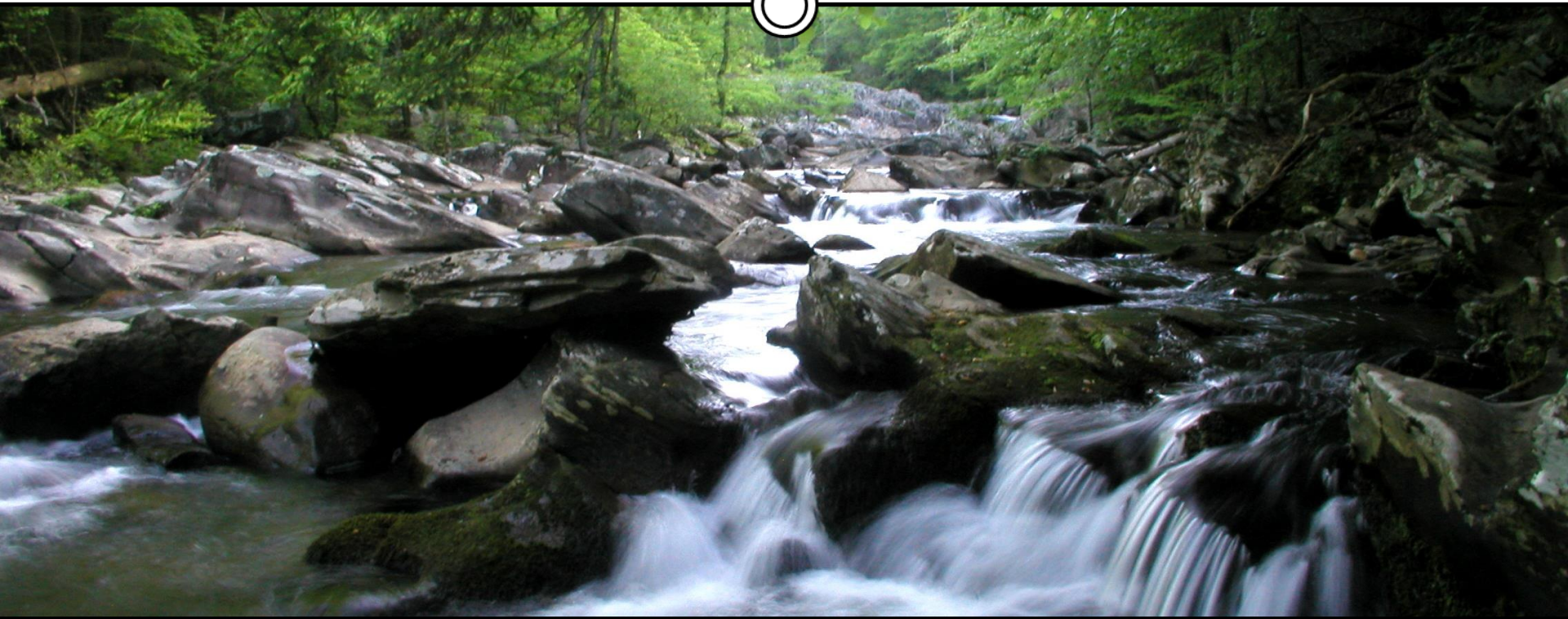


## Georgia 2013 Triennial Review



**June 2015**

# Water Quality Standard Triennial Review



- 40 CFR 131.20 requires Georgia to review and revise water quality standards from time to time, but at least once every three years
- Georgia's water quality standards are given in Chapter 391-3-6-.03 of the Georgia Rules and Regulations for Water Quality Control
- Water quality standards include
  - Designated Uses
  - Criteria, either numeric or narrative
  - Antidegradation policy

# Meetings Held



- Inform the public that Georgia has entered the Triennial Review Period and solicit public stakeholder input
  - February 6, 2013(Public Meeting)
  - April 16, 2013 (Public Meeting)
  - July 10, 2013 (Public Hearing)
  - March 26, 2014 (Conference)
  - November 5, 2014 (Conference)
  - December 2-4, 2014 (Public Meeting)
  - April 12, 2015 (Conference)
  - June 26, 2015 (Public Hearing)

# Changes Under Consideration



- Update current language regarding Outstanding National Resource Water (ONRW) and designate Headwaters of the Consauaga River in the Cohutta Wilderness as an ONRW
- Adopt Site Specific Copper Criteria for Buffalo Creek
- Update Bacteria Criteria for Recreational Waters
- Designate some new Recreational Waters
- Remove 750 cfs footnote
- Clarify total lake loading of phosphorus
- Removal of the Variance to the Narrative Toxicity Standard on Cabin Creek

# Outstanding National Resource Waters



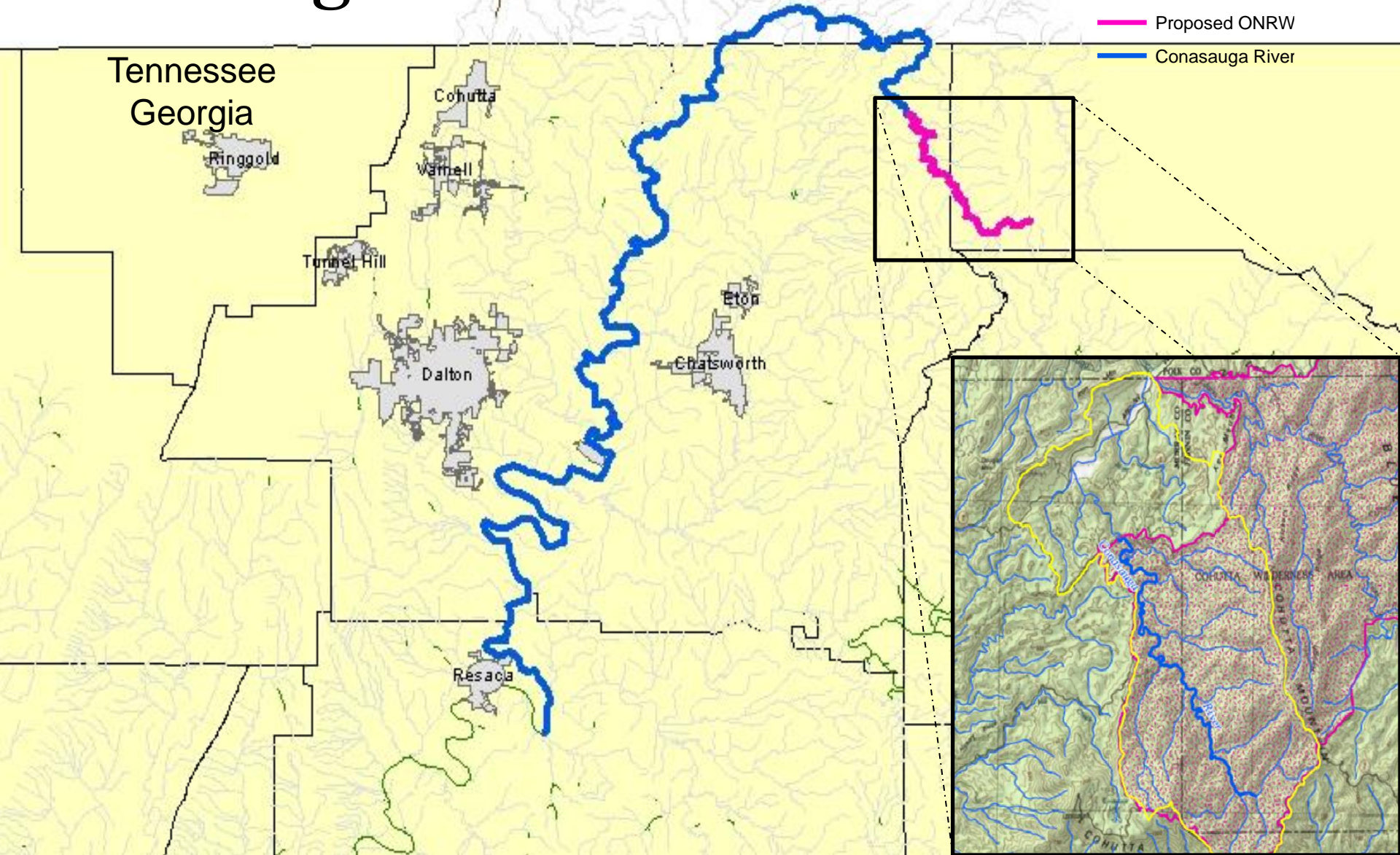
- Affords the highest water quality protection under the antidegradation policy (Tier 3 waters)
- Existing water quality shall be maintained and protected
- For waters of exceptional ecological, recreational, **aesthetic, or historic** significance
- Best suited on national or state parks, refuges, wilderness areas, or sanctuaries

# Conasauga River



- Proposed by Environment Georgia Research & Policy Center and the Southern Environmental Law Center
- Submitted complete application package on July 10, 2013
- Designated the headwaters within Cohutta Wilderness Area of Chattahoochee National Forest
- High biodiversity of fish and mussels
- Excellent water quality

# Proposed ONRW in Relation to entire Conasauga River



# Copper Criteria

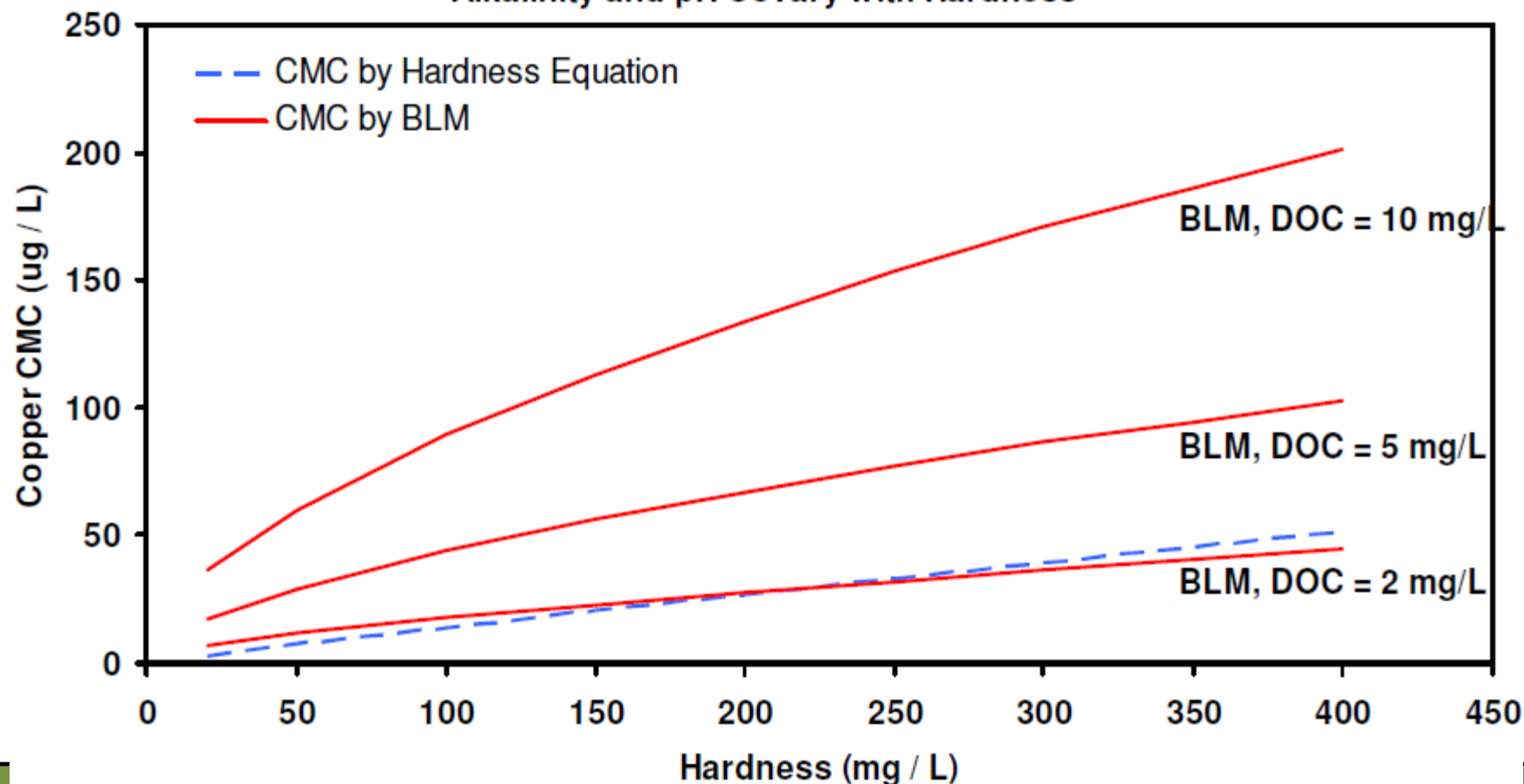


- Instream water quality can affect metal toxicity
- EPA's 1986 freshwater copper criteria are a function of hardness
  - Underprotective at low pH
  - Overprotective at high Dissolved Organic Carbon levels
- EPA's 2007 freshwater copper criteria uses the Biotic Ligand Model

# Comparison of 1986 and 2007 Copper Criteria



Comparison of CMC calculated by BLM or Hardness Equation  
Alkalinity and pH Covary with Hardness



# Biotic Ligand Model



- Biotic Ligand Model is a metal bioavailability model that uses the receiving waterbody characteristics to develop site-specific criteria
- 10 water chemistry parameters used to calculate a freshwater copper criterion
  - Temperature
  - pH
  - DOC
  - Calcium
  - Magnesium
  - Sodium
  - Potassium
  - Sulfate
  - Chloride
  - Alkalinity

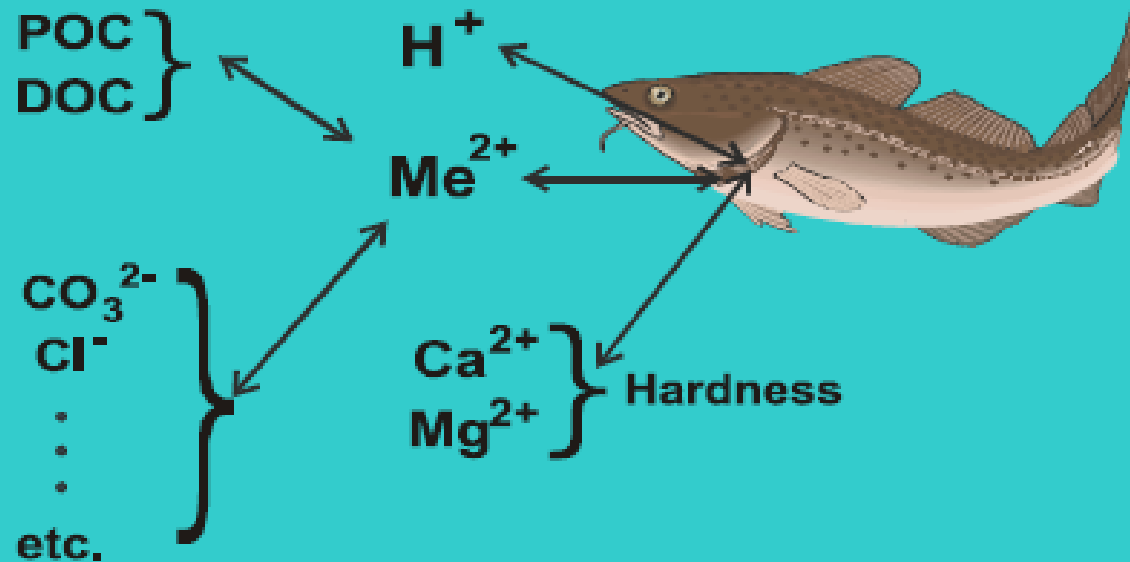
# Biotic Ligand Model



## SCHEMATIC OF BIOTIC LIGAND MODEL

### FORMATION OF METAL COMPLEXES

### COMPETITIVE BINDING AT GILL





# Site Specific Copper Criteria



- Buffalo Creek (Richards Lake Dam to confluence with Little Tallapoosa River)

$$\text{Acute criteria} = 4.9 \times 10^8 e^{\left( -0.5 \left( \left( \frac{(\ln(pH) - 2.316)}{-0.1816} \right)^2 + \left( \frac{(\ln(DOC) - 32.18)}{-5.453} \right)^2 \right) \right)}$$

$$\text{Chronic criteria} = 3.043 \times 10^8 e^{\left( -0.5 \left( \left( \frac{(\ln(pH) - 2.316)}{-0.1816} \right)^2 + \left( \frac{(\ln(DOC) - 32.18)}{-5.453} \right)^2 \right) \right)}$$

# Bacteria



- Disease-causing microbes exist in very small amounts in water
- EPA “Indicator organisms” are used to identify where fecal contamination has occurred and, therefore, where disease-causing microbes may be present
  - Fecal coliform, E coli, enterococci
  - These organisms generally do not cause illness
- Used for protection of human health for individuals recreating in the water (e.g., swimming, bathing, surfing, or similar activities)

# Bacteria Criteria



- EPA's 2012 Bacteria Criteria issued based on results of the National Epidemiologic and Environmental Assessment of Recreational Water (NEEAR)
- New criteria offers a similar level of protection from illness as existing fecal coliform criteria

# Bacteria Criteria



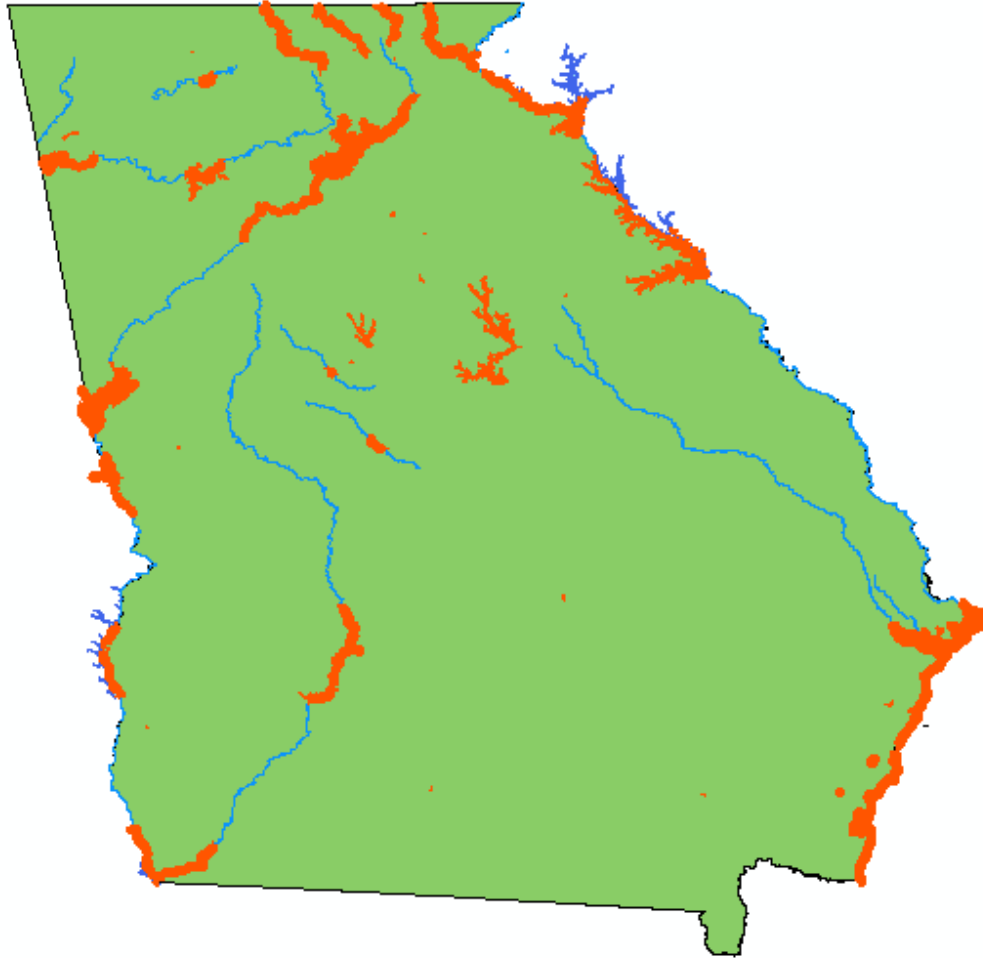
- New EPA criteria recommends two bacterial indicators for fecal contamination, E coli for freshwater and enterococci for marine or fresh waters
- EPA no longer recommends values related to “use intensity” and does not address secondary contact recreational uses
- Includes a 30-day geometric mean and a Statistical Threshold Value (STV).
  - There should not be greater than a 10% excursion frequency of the STV in the same 30-day period.

# Bacteria Criteria



- Freshwater (E. coli)
  - 126 cfu/100mL (Geometric mean)
  - 410 cfu/100 mL (Statistical Threshold Value)
  - Use culturable methods (EPA Method 1603 or equivalent)
- Marine waters (Enterococci)
  - 35 cfu/100mL (Geometric mean)
  - 130 cfu/100mL (Statistical Threshold Value)
  - Use culturable methods (EPA Method 1600 or equivalent)

# Recreational Waters



Department of Natural Resources

# Removal of 750 cfs Footnote



- Chattahoochee River, Atlanta (Peachtree Creek) to Cedar Creek footnote states that specific criteria apply at all times when the river flow upstream from Peachtree Creek equals or exceeds 750 cfs.
- Historically, the 750 cfs was the flow used to develop wasteload allocations for dischargers to the Chattahoochee River downstream from Peachtree Creek.
- Removal of footnote will make clear that this section of Chattahoochee will be treated consistent with all other regulated streams.
- See handout for more information.

# Lake Phosphorus Loading



- 1990 Lake Law (O.C.G.A. § 12-5-23.1) requires that a multiple parameter approach for lake water quality standards be adopted.
- For each lake with water quality standards, numerical criteria should be adopted for a variety of parameters including:
  - pH (maximum and minimum)
  - Fecal coliform bacteria
  - Chlorophyll a for designated areas determined as necessary to protect a specific use
  - Total nitrogen
  - Total phosphorus loading for the lake in pounds per acre feet per year
  - Dissolved oxygen in the epilimnion during periods of thermal stratification.
- For each lake, EPD is clarifying that the lake phosphorus annual loading is for Total Phosphorus.

# Remove Variance



- April 2000: Georgia adopted a site-specific temporary variance from the water quality standards for toxicity from the Springs Industries Griffin Finishing Plant discharge downstream to the Walkers Mill Road crossing in Cabin Creek in the Ocmulgee River Basin in Spalding County.
- January 10, 2002: EPA approved Georgia's variance to the water quality-based chronic whole effluent toxicity criteria for Springs Industries.
- Springs Industries has since closed the Griffin facility
- December 2009: Springs Industries' permit (NPDES Permit No. GA0003409) was transferred to Spalding County Water and Sewerage Facilities Authority.
- The temporary exception from water quality standards is no longer needed.

# Proposed Schedule



- The DNR Board was briefed in April
- 45-day Public Notice period started in early May
- Public Hearing June 26, 2015 – Comments due
- Final Presentation to the DNR Board in August
- Secretary of State Certification
- Attorney General Certification
- Submit to EPA for approval
- EPA approves revisions within 60 days or disapproves revisions within 90 days



# Comments